Supporting Statement B: for Revision Request for Clearance:

# NATIONAL AMBULATORY MEDICAL CARE SURVEY

OMB No. 0920-0234

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## B. Collections of Information Employing Statistical Methods

### 1. Respondent Universe and Sampling Methods

The National Ambulatory Medical Care Survey (NAMCS) target universe represents three major components: (a) ambulatory care providers submitting provider-specific interview data (Provider Survey Component), (b) ambulatory care providers submitting electronic data (Provider Electronic Component), and (c) Health Centers (HCs) which have EHR systems and will submit data in this format (Health Center Component).

NAMCS defines ambulatory care providers in two ways: (a) non-federally employed physicians (excluding those in the specialties of radiology and pathology) practicing in the United States and classified as engaging in "office-based patient care," and (b) advanced practice providers providing similar care. Advanced practice providers have historically been defined in NAMCS as nurse practitioners (NPs), physician assistants/physician associates (PAs), and certified nurse midwives (CNMs). The inclusion of PAs started in 2023, with the goal of expanding in successive survey years to NPs and possibly other types of advanced practice providers (e.g., CNMs) if funds permit and methodological research demonstrates the feasibility. These two provider types (physicians and advanced practice providers) will be utilized for the Provider Survey Component (employing a mixed-mode methodology) described below. Further, in addition to these two provider types, the Provider Electronic Component will explore the possibility of expanding its sample to large medical conglomerates and medical groups/practices.

The projected sample sizes (summarized in Table 1) for the ambulatory care providers in the Provider Survey Component are 10,000 providers annually for years 2025-2027. These 10,000 providers will rotate provider type, between physicians and advanced practice providers, yearly. The sample size for the ambulatory care providers who provide electronic visit data will remain at 3,000 providers for each sample year. Throughout this submission, providers sampled for the Provider Electronic Component are primarily discussed as physicians and/or advanced practice providers; however, if feasible, we may include large medical conglomerates and medical groups/practices as part of this annual 3,000 provider sample. For the purposes of this SSB, we will refer to the Provider Electronic Component sample as "Ambulatory Care Providers" or "providers". The projected sample sizes for the HC Component are 151 HCs in 2024 (lowered from 200 per previously approved package due to budget restraints and attrition), 171 HCs in 2025, 191 HCs in 2026, and 201 HCs in 2027. HCs recruited into the survey will continue to provide EHR data for as long as they are willing to continue to participate.

Table 1-Annual and Annualized NAMCS Sample Counts

| | CY2025 | CY2026 | CY2027 | Annualized Average |
|---|---|---|---|---|
| Physicians (no visit data collected) | 0 | 10,000 | 0 | 3,333 |
| Advanced Practice Providers (no visit data collected) | 10,000 | 0 | 10,000 | 6,667 |
| Ambulatory Care Providers who submit electronic data | 3,000 | 3,000 | 3,000 | 3,000 |
| Health Centers | 171 | 191 | 201 | 188 |

Provider Survey Component

Both physicians and advanced practice providers will be sampled for the Provider Survey Component of NAMCS. These providers will submit the Ambulatory Care Provider Interview (ACPI) (**Attachment C2**). Physicians will consist of non-federally employed physicians practicing in the United States who were classified by the American Medical Association (AMA) or the American Osteopathic Association (AOA) as being in "office-based, patient care" and those classified by AMA as being "hospital employed" (as a proxy for hospital-owned office-based practices). Although the current selection of physicians will utilize a definition of "office-based", the survey is exploring criteria of this definition and may choose to modify selection parameters in future years. NAMCS will continue with the addition of anesthesiologists and "unclassified" physicians to the sampling frame; the "unclassified" group includes physicians from eligible specialty groups whose primary type of practice and present employment are unknown. If it is determined that this modified office-based selection criteria shows little or no differential positive impact on response rates, we will examine alternative ways to define an eligible NAMCS physician in subsequent survey years. Physician assistants will consist of licensed PAs engaged in direct patient care as defined by the American Academy of Physician Associates (AAPA). As mentioned above, ambulatory care providers may be expanded in future samples to include other types of advanced practice provider (e.g., NPs, CNMs) as funds become available and as methodological research demonstrates the feasibility. As mentioned in the previously approved OMB package, pursuant to Executive Order 13985 (January 20, 2021) on "Advancing Racial Equity and Support for Underserved Communities Through the Federal Government" this expansion in scope and sample size may be utilized when updating the sampling methodology. This update would target underserved populations, such as rural, urban, tribal, and/or other populations. To generate estimates representative of these universes, NAMCS will annually draw a sample of ambulatory care physicians and/or advanced practice providers. These samples will be stratified with strata defined by the four U.S. Census regions. Furthermore, the physician samples will include stratification based on the 17 MD physician specialty/DO groups. A separate stratum for anesthesiologists and a stratum for "unclassified" physicians will continue to be included in the physician samples; with the total specialty groupings now totaling 17. From each appropriate sampling stratum, systematic random sampling will be used to select physicians and/or advanced practice providers from a list in which the physicians/advance practice providers are sorted (in order of priority) by Census division and MSA status (i.e., in MSA vs. not-in MSA, where MSA is Metropolitan Statistical Areas defined by the OMB). Finally, this sampling design facilitates representative annual provider estimates by the four U.S. Census regions, as well as for the nation.

Provider Electronic Component

This request currently focuses on electronic data as defined by EHRs. However, future data years, submission might include the collection of other forms of electronic visit-related data. For 2025-2027, NAMCS will continue to sample providers from the National Health Care Surveys Registry to generate estimates of visits to that provider population, but if feasible, we may expand to large medical conglomerates and medical groups/practices. As mentioned above, there may be a combination of physicians and advance practice providers in this sample of 3,000. Providers who registered with the Registry will be identified in the AMA/AOA universe. Registered providers identified in the AMA/AOA universe will then be sampled; however, some advanced practice providers, not in the AMA/AOA, or providers in groups not part of the

Registry, may be included as part of this sample of 3,000 providers. This sample will be separate from the sample drawn for the Provider Survey Component but will mirror the criteria utilized for selection in the Provider Survey Component (described above). Providers sampled from the Registry will have a full year of visit data collected through submission of EHR data via the National Health Care Surveys' Health Level Seven International (HL7) Implementation Guide (IG) for Clinical Document Architecture (CDA®) R2 Implementation Guide (IG): National Health Care Surveys, R1 DTSU Release 1.2 or Release 3 (or current version). These providers may be asked to complete the Provider Facility Interview (PFI) (**Attachment L**) to ensure that (a) they are eligible for NAMCS participation, and (b) all data needed to create weighted national visit estimates are obtained.

In future data years, along with exploring the possibility of collecting data from advanced practice providers, large medical conglomerates, and practices NAMCS will be exploring the possibility of obtaining other types of electronic data from third party entities such as IQVIA, the American Board of Family Medicine, Premier, Inc., and others to supplement NAMCS visit data.

Health Center Component

As in 2023, this NAMCS sampling component consists of HCs which have and utilize EHR systems. The HC universe includes three different types of HCs: (a) HCs that receive grant funds from the federal government through Section 330 of the Public Health Service Act; (b) look-alike HCs who meet all the requirements to receive 330 grant funding, but do not actually receive a grant; and (c) Urban Indian Health Centers (to be included in future survey years). The list of federally funded HCs (330 grant) and look-alike HCs is provided by the Health Resources and Services Administration (HRSA) and the Urban Indian Health Centers list would be provided by the Indian Health Service.

The 2025-2027 HC component will use a stratified list sample of HCs with EHR systems. The strata will be defined by Census region and MSA status (MSA vs. non-MSA). From each sampling stratum, systematic random sampling will be used to select HCs from a list in which the eligible HCs are arrayed by Census division and (when Urban Indian Health Centers would be included) HC type. The sampled HCs will continue in the survey until the HC requests to be removed from the sample.

From each HC selected, NAMCS will collect available electronic records for all visits in a 12-month period. In 2024, up to 151 HCs were targeted; a planned increase to 171 HCs will represent the sample for 2025. Further, there is potential of increasing the sample to 191 HCs in 2026, and 201 HCs in 2027. This sample will be used to produce estimates of HC visits with electronic records for the nation and the four Census regions. A limited amount of data on HC characteristics will also be collected for weighting and analytic purposes.

## 2. Procedures for the Collection of Information

Provider Survey Component

The NAMCS Provider Survey Component data collection utilizes a sequential, mixed-mode of administration by means of both a self-administered web-based survey and a self-administered paper-based mail survey. There may be an opportunity to complete the web-based survey via telephone with a Help Desk Operator, dependent on recruitment contractor. The recruitment and fielding methods follow best practices by using Dillman's Tailored Design Method,[1] with some modifications for the population of interest. The contractor will oversee all components of ambulatory care provider data collection for at least the 2025 data year, with the data collection agents for future years of the ambulatory care provider data to be determined. Following clearance, recruitment will begin with mail and/or email invitations to participate in NAMCS via self-administered web-based survey. Respondents could receive additional invitations, paper self-administered questionnaires, emails, thank-you/reminder information cards, and other public relations materials dependent on their response status.

Please see **Attachment N2** for draft copies of the proposed invitation letters. At any point during the steps of the administration of NAMCS described above, providers can refuse. After the first email and continuing throughout the stages described below, who receives contact from NCHS will be modified based on specific provider feedback (i.e., responding to email or mailing in a questionnaire).

Selected content groupings included on the ACPI are shown below with the full listing of all questions found in **Attachments D and E**:

- Physician specialty
- Provision of outpatient care
- Number and types of physical locations providing care
- Reporting location facility characteristics
- Workforce, revenue, and compensation
- EHR and telemedicine
- Health equality and language barriers
- Pain treatment and treatment with opioids
- Professional Autonomy
- Provider demographics

Provider Electronic Component

Participating providers whose visit data are collected through submission of EHR data will transmit that data directly via the NCHS Healthcare Electronic Health Records (HEHR) system in the format of the National Health Care Surveys' IG (or a custom extract, Fast Health Interoperability Resources [FHIR] messaging, or potentially other future updated IGs with similar data elements). This IG was created in collaboration with the Office of the National Coordinator for Health Information Technology (ONC) and multiple NCHS subunits including the Office of Classifications and Public Health Data Standards. This standard was created to address the diversity of EHR systems' data collection and storage.

[1] The Tailored Design Method (TDM), also known as the Dillman survey method, is regarded as the standard for mail surveys. TDM includes steps such as sending a personalized letter, the questionnaire with return postage, a follow-up postcard, and multiple packets to non-respondents.

For sampled providers who registered with the National Health Care Surveys Registry, the data collection contractor for NAMCS will initiate contact with their organizational contact. The initial letter sent informs the organizational contact that provider(s) from their organization have been sampled for participation in NAMCS, and if they are already submitting data to be compliant with the Medicare Promoting Interoperability Program and the Merit-based Incentive Payment System, these data will also be used with NAMCS (**Attachment N3**). For Advanced practice providers, large medical conglomerates, medical groups, and practices that are not registered with the National Health Care Surveys Registry the data collection contractor for NAMCS will initiate contact with a contact person to determine willingness to participate in NAMCS, due to its voluntary nature for those participants.

Sampled EHR providers are asked to complete a Provider Facility Interview (PFI) (**Attachment E**). Once the PFI is completed, it is reviewed to verify the provider's eligibility for NAMCS. Provider data collected on the PFI is also necessary to weight EHR data and make nationally representative visit estimates. Eligible providers are invited, if they have not already, to begin the process of testing and validation (T&V) of their EHR systems and their ability to send EHR via the IG **(Attachments G, H** and **I**).

Once the results of T&V show that specific transmission and compatibility guidelines are met, the provider is then invited to the production phase of NAMCS EHR data collection. Electronic visit data will be submitted by the organizational contact or the providers themselves (although we anticipate a very small number of providers will be performing this task themselves).

Select data items collected from EHRs are shown below. A full listing of all the variables can be found in **Attachment G**:

- Personal patient identifiers (EHR only: name, address, medical record number when available, Medicare/Medicaid number, and social security number when it is available)
- Date of birth
- Sex
- Date of visit
- Encounter number
- Diagnoses
- Services provided or ordered during the visit, including:
    - Diagnostic testing (e.g., lab, imaging, EKG, audiometry, biopsy)
    - Therapeutic procedures, including surgery, and non-medication treatments (e.g., physical therapy, speech therapy, home health care)
- National Provider Identifier (physicians and health care providers only)
- Race
- Ethnicity
- Marital Status
- Source(s) of payment
- Reason for visit
- Results of testing and procedures
- Medications and Immunizations
- Clinical notes (e.g., from physicians, nurses, physician assistants, and certified nurse midwives)

For sampled NAMCS providers where a name match to the PI registry could not be established (i.e., they are sampled via physician groups or conglomerates not registered with the National Health Care Surveys Registry), further methodological procedures will be developed that will allow NCHS to accept submissions of their EHR data based on the most current NHCS IG.

Health Center Component

Starting in 2021, and continuing throughout 2027, HCs selected to participate in NAMCS will be sent an introductory letter or email (**Attachment N1**) and information packet prior to being contacted by phone and/or email. The letter will describe the purpose of the survey and authority for data collection, that participation is voluntary and that all collected identifying information is confidential. When sent, these letters may be accompanied by endorsement letter(s) from specialty medical colleges and/or professional associations relevant to the sampled HC, an informational/motivational insert, or other public relations materials.

Currently during the initial interview with the HC contact, a research analyst partially completes the HC Facility Interview questionnaire (**Attachment C2**). The HC contact has the option of completing the interview with the research analyst or a self-administered web instrument. The major purpose of the HC Facility Interview Questionnaire is to gather information to assist in weighting of the collected visit data. Once the Facility Interview Questionnaire is completed, NCHS will work with the HC to set up data transmission. HCs will be required to use the IG (or a custom extract, Fast Health Interoperability Resources [FHIR] messaging, or potentially other future updated IGs with similar data elements) for data submission. A one-time set-up fee of up to $10,000 will be given to every participating HC.

Selected content groupings included on the draft HC Facility Interview Questionnaire are shown below with the full listing of all the questions found in **Attachment C2.**

- Initial confirmation and basic HC characteristics
- HC director contact information
- Health center characteristics
- EHR use/characteristics Set-up reimbursement for participation

As mentioned in Supporting Statement A, a sampled HC will be asked to submit directly to NCHS a full 12 months of EHR data according to the National Health Care Surveys' IG (or a custom extract, Fast Health Interoperability Resources [FHIR] messaging, or potentially other future updated IGs with similar data elements). Further, EHRs are transmitted through the HEHR platform. This is the same mechanism for collection as described in the "Provider Electronic Component" section above and selected EHR data items are listed in that section. For the full list of data items please see **Attachment G**.

Monitoring Data Collection and Quality Control

NCHS will continue to be responsible for overseeing the data collection for each NAMCS component. NCHS staff or contractor staff will ask each HC or provider to first submit a test file. The data will go through T&V procedures to ensure that essential variables are present and are in a suitable format for NAMCS. NCHS or its contractor will work with the HCs, providers, or

provider groups, along with their vendors if needed, who submit EHR data to make any needed changes or additions to the files submitted.

Estimation Procedures

National and Census regional provider and visit estimates will be produced based on three fundamental sources of data: (a) private non-federal office-based physicians, (b) advanced practice providers (i.e., currently PAs, possibly expanding to additional provider types in successive data years) providing direct patient medical care, and (c) HCs designated as 330 grant-supported federally funded qualified health centers, federally qualified look-alikes, and (eventually) Urban Indian Health Centers. The estimation procedure has four basic components: (a) inflation by reciprocals of the selection probabilities, (b) adjustments for nonresponse, (c) calibration ratio adjustment, and (d) weight smoothing. Please note, initially visit estimates will only be produced for the population of visits seen by providers registered with the National Health Care Surveys Registry and the population of HC visits with electronic records. Further, we recognize that once externally sourced EHR data are incorporated as a NAMCS data source, we will then need to review current statistical methods to determine and apply the most effective path to generate visit estimators.

In prior survey years of NAMCS, the annual sample size has had the statistical power needed to generate representative estimates for four Census regions. NAMCS data can also be used to make national estimates of office-based physicians, selected advance practice providers, HCs, and associated medical practices. These estimates are unbiased and based on a complex sampling design with multistage estimation. Provider weights will be used to produce national estimates of office-based physicians and associated advanced practice providers by characteristics of the providers (e.g., sex, age, and specialty) and their medical practices (e.g., numbers of providers in the practice, ownership, and types and numbers of patient encounters in last full week of practice). The NAMCS provider sampling weight can also be modified to produce a national medical practice estimator (e.g., practice size, breadth of specialization, and selected diagnostic and therapeutic services available onsite). Data from the NAMCS samples are weighted by the inverse of selection probabilities with non-response adjustments done at least within specialty groups and, when feasible within U.S. Census regions and/or MSA status. Calibration adjustment factors are used to adjust estimated total counts to known total counts appropriate for each sample.

Each year, NCHS publishes weighted response rates by a variety of provider characteristics available from the sampling frame and the providers themselves. Future publications will potentially include response rates from other advance practice providers or groups when applicable. Additional information concerning the 2025-2027 nonresponse is described below in “Section 3: Methods to Maximize Response Rates and Deal with Nonresponse.”

*Sampling Errors*

The standard error is primarily a measure of the sampling variability that occurs by chance because only a sample rather than an entire universe is surveyed. Estimates of the sampling variability are calculated using statistical software that is able to account for the complex survey design of NAMCS.

## 3. Methods to Maximize Response Rates and Deal with Nonresponse

The 2025-2027 ACPI has undergone cognitive testing by the Collaborating Center for Questionnaire Design and Evaluation Research (CCQDER) within NCHS. Suggested modifications have been incorporated in the latest attached version of the ACPI. The respondent is expected to take 30 minutes to complete either the paper or web-based questionnaire.

NAMCS uses multiple methods for maximizing physician response. The medical community, including the AMA, AOA, and advance practice groups, is informed and consulted about the study. In 2023, NAMCS received sixteen endorsements from various major medical societies and professional organizations used for enlisting sampled providers (**Attachment P**). Historically, providers selected for the NAMCS Provider Survey Component samples were excluded from possible selection again for the following two years. This will continue in 2025. In 2023, the NAMCS Provider Survey Component piloted a new methodology; at the same time there was a noticeable decrease in response rate. Thusly, NAMCS is introducing several methods to increase survey response. In 2025, NAMCS will use multiple types of contact (i.e., letters, emails, survey packets, and information cards) to help convince the physician, advanced practice provider, and gatekeeper of the importance in participating in NAMCS. Recruitment tools will also be used to answer questions that physicians, advanced practice providers, and HC administrators may have on why they should participate, describe how the Privacy Rule permits visit data collection for NAMCS (providers in electronic (registry) data component and HC administrators only), and provide a link to the NAMCS participant website.[2]

NAMCS is included in the Medicare Promoting Interoperability Program (Promoting Interoperability [PI]). A direct incentive that should influence responses positively is that sampled registered providers who are selected to submit EHR data and are linked to the National Health Care Surveys Registry can use their electronic visit data submission to fulfill the program's requirements. Also, if funds permit and modifications to the NAMCS methodology support, a one-time monetary set-up fee might be provided in future data years for providers participating through submitting EHR data.

Prior observation of nonresponse cases in NAMCS found that a substantial portion of interviews break-off at the initial contact, or stage of the telephone screener (43%) and often the refusal is from the office staff rather than the physician or HC facility director. Each year in our annual statistical report, we describe weighted characteristics of NAMCS respondents and non-respondents on numerous variables, including age, gender, geographic region, metropolitan statistical area (MSA) status, type of doctor, specialty, specialty type, type of practice, and annual visit volume. In 2016 a nonresponse bias report about the 2012 NAMCS estimates was published as a *Vital Health Statistics* report,[3] which found after adjustment for nonresponse by MSA status, Census division or targeted state, and physician specialty categories, no or minimal biases (<2.0% points) were observed by these characteristics between physician estimates based on the full eligible physician sample and physician estimates based on either of the two NAMCS respondent types (Induction Interview respondents and those who completed the Induction and submitted visit data). Current nonresponse bias research is underway on the new NAMCS Provider Survey Component methodology.

[2] https://www.cdc.gov/nchs/ahcd/namcs_participant.htm.
[3] https://www.cdc.gov/nchs/data/series/sr_02/Sr02_171.pdf.

As mentioned, we will continue to create statistical reports focused on describing weighed characteristics of providers and HCs.

**4. Tests of Procedures or Methods to be Undertaken**

Beginning in 2015, NAMCS has been included in the Medicare Promoting Interoperability Program (Promoting Interoperability [PI], formerly known as Meaningful Use [MU]) under the Public Health Objectives via the National Health Care Surveys Registry. Selected registry providers participating in NAMCS can use submission of NAMCS data as one of their options to fulfill requirements under those objectives. Multiple CMS and Office of the National Coordinator for Health Information Technology (ONC) rules require providers participating in the PI Incentive Program to use the 2015 Edition CEHRT. The standard and format required by the 2015 Edition CEHRT for transmission to Public Health Agencies is currently the Health Level Seven International (HL7) Clinical Document Architecture (CDA®) R2 Implementation Guide (IG): National Health Care Surveys, R1 DTSU, Release 1.2 or Release 3 -US Realm. The adoption of the IG will reduce the burden of EHR data submission.

NAMCS continues to explore avenues to reduce participation burden and increase response rates. For the 2025-2027 data collection, NAMCS is proposing to conduct an experiment utilizing providers that utilize AthenaHealth as their EHR vendor. There are currently 95,000 AthenaHealth providers in the National Health Care Surveys registry. To maximize resources, NCHS is partnering with AthenaHealth to test existing HEHR Cloud capabilities to collect, test and validate, store data, and process data, as well as facilitate the needs of participating registrants to meet PI/MIPS reporting for up to 100,000 providers using the NHCS CDA IG. In the future, this work may be expanded to incorporate FHIR as a means of data submission as well. AthenaHealth has partnered with NCHS in this effort because their providers receive credit from CMS for PI/MIPS compliance. Initial release of the AthenaHealth provider data will be in the form of unweighted visit data through a data visualization dashboard. Additionally, once the AthenaHealth data has been collected, further statistical and methodological work will be conducted to determine if nationally representative estimates can be made. These results may be published, giving researchers access to timely data. We are seeking approval to use non-substantive change requests to further incorporate this experimental work into NAMCS formally, should the experiment prove fruitful.

**5. Individuals Consulted on Statistical Aspects and Individuals Collecting and/or Analyzing Data**

The statisticians responsible for the survey sample design are:

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A contractor will be responsible for data collection. The data will be analyzed under the direction of:

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